

Editorial**A&D, a bridge between aging and age-related disease****Kunlin Jin\*, Ashok K. Shetty\* and David A. Greenberg\***

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People are living longer. The average life expectancy at birth in colonial Virginia was under 25 years. At the beginning of the 20th century, life expectancy in the United States was still only 47.3 years. However, life expectancy has since increased dramatically, to 70.8 years in 1970 and 76.9 years in 2000. Today there are over 70,000 centenarians, and the U.S. Census Bureau expects this to increase to about 800,000 by 2050. Progress in lengthening lifespan is thought to have resulted from medical and public health efforts, rising standards of living, better education, improved nutrition, and more salubrious lifestyles.

Are there intrinsic limits to human lifespan? Despite dramatic improvement in average life expectancy, maximum documented lifespan in humans has remained at about 100–120 years throughout history. Most people do not live this long, however, because of disease (including age-related disease) and, perhaps also, physiological changes associated with “normal” aging. It has been proposed that such pathological and physiological factors may be interrelated, in that the aged are more prone to disease and have more limited adaptive capacity than younger adults. About 80% of older adults have age-related disorders like obesity, diabetes, hypertension,

or heart disease, and 50% have at least two. Thus, aging has been described as a “risk factor” for various diseases, but the practical value of identifying such a non-modifiable risk factor—as opposed to modifiable risk factors like diet or hypertension—is unclear. Some have gone so far as to consider aging the “cause” of age-related diseases, although this does not explain why such diseases do not develop in everyone, nor why different individuals get different diseases. Aging (i.e., becoming chronologically old) is inevitable, but age-related diseases may not be.

A major goal of modern medicine is to preserve quality of life. Applied to the elderly, this translates into concepts like “successful”, “healthy”, or “optimal” aging, which are considered to comprise avoiding disease and disability, maintaining good cognitive and physical function, and remaining actively engaged in life. These objectives require the coordinated efforts and combined insights of scientists studying the basic biology of aging—gerontologists—and those focused on age-related disease—geriatricians, internists, neurologists, and others. The major goal of this journal is to provide a forum that will help to fill the current gap between studies of the basic biology of aging and of aged-related disease.